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1992 WATER QUALITY ASSESSMENT REPORT
SUSQUEHANNA RIVER BASIN

SUSQUEHANNA RIVER BASIN COMMISSION

JANUARY 1992

The Susquehanna River Basin Commission was created as an independent agency by a Federal-Interstate Compact* among the States of Maryland, New York, Commonwealth of Pennsylvania and the Federal Government. In creating the Commission, the Congress and State Legislatures formally recognized the water resources of the Susquehanna River basin as a regional asset vested with local, State and National interests for which all the parties share responsibility. As the single Federal-Interstate water resources agency with basinwide authority, the Commission's goal is to effect coordinated planning, conservation, management, utilization, development and control of basin water resources among the government and private sectors.

SUSQUEHANNA RIVER BASIN COMMISSION

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Executive Director

* Statutory Citations: Federal - Pub. L. 91-575, 84 Stat. 1509 (December, 1970); Maryland - Natural Resources Sec. 8-301 (Michie 1974); New York - ECL Sec. 21-1301 (McKinney 1973); and Pennsylvania - 32 P.S. 820.1 (Supp. 1976).

1992 WATER QUALITY ASSESSMENT REPORT

SUSQUEHANNA RIVER BASIN

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The work upon which this report is based was supported by federal funds provided by the United States Environmental Protection Agency under a Water Pollution Control-Statewide Interstate Program Grant Number I-003992-92-0.

SUSQUEHANNA RIVER BASIN COMMISSION
1721 N. Front Street
Harrisburg, PA 17102-2391

Publication No. 144

January 1992

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PART I: EXECUTIVE SUMMARY/OVERVIEW

This report was prepared to meet the requirements of Section 305(b) of the Clean Water Act. The report format follows that requested by the U.S. Environmental Protection Agency (EPA) in their "Guidelines for the Preparation of the 1992 State Water Quality Assessments (305(b) Reports)."

The Susquehanna River drains 21,510 square miles from portions of New York, Pennsylvania, and Maryland, and contributes to over half of the freshwater inflow to the Chesapeake Bay. This report covers 17,366 stream miles assessed out of 21,100 miles of named streams in the basin. Just over 15,897 stream miles (91 percent of the total) fully support designated stream uses and, therefore, the Clean Water Act's fishable/swimmable goal.

The major cause of stream degradation is metals (primarily from mining activities), which pollute 836 stream miles. Excluding metals from mining activities, an additional 31 stream miles are known to be impacted by toxics. Nutrient enrichment and associated aquatic growth and low dissolved oxygen from agricultural runoff and municipal wastewater discharges account for another 287.8 miles of degraded streams.

PART II: BACKGROUND

The Susquehanna River drains the largest basin on the Atlantic coast of the United States. It originates at Otsego Lake, Otsego County, New York, and flows 450 miles to the Chesapeake Bay. The Susquehanna River Basin includes 43 percent of the Bay's watershed and provides over 50 percent of the freshwater entering the Chesapeake Bay. Basin statistics and map are given in table 1 and figure 1.

TABLE 1.--Atlas

Basin population (1990):			3,850,000
Basin surface area (sq. mi.):			27,510
Number of water subbasins:			
Chemung-	2,604 sq. mi.	(10%)	
Eastern-	4,944 sq. mi.	(18%)	
Upper Susquehanna-	3,755 sq. mi.	(14%)	
West Branch Susquehanna-	6,992 sq. mi.	(25%)	
Juniata-	3,406 sq. mi.	(12%)	
Lower Susquehanna-	5,809 sq. mi.	(21%)	
States in Basin:			
New York-	6,327 sq. mi.	(23%)	
Pennsylvania-	20,908 sq. mi.	(76%)	
Maryland-	275 sq. mi.	(1%)	
Total number of stream miles:			21,100
Number of lakes/reservoirs/ponds:			*
Acres of lakes/reservoirs/ponds:			*
Square miles of estuaries/harbors/bays:			0
Number of ocean coastal miles:			0
Acres of freshwater wetlands:			*
Acres of tidal wetlands:			0

* Not determined

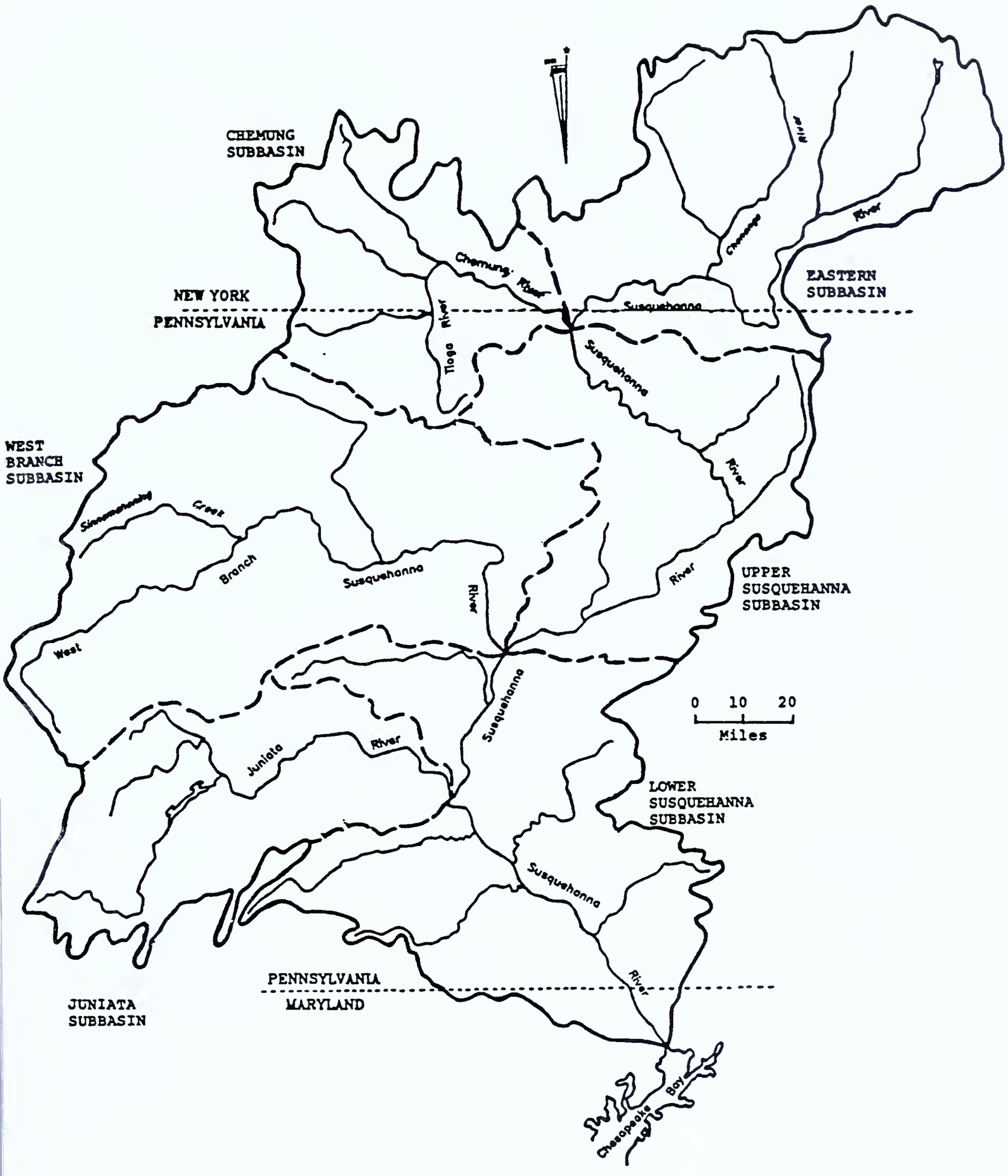

FIGURE 1.--Susquehanna River Basin

Summary of classified uses

Because the basin contains portions of three states, three different state lists define the classes of streams in the Susquehanna River Basin (table 2). Stream classifications are based on a combination of aquatic life, water supply, and recreational uses.

TABLE 2.--Summary of stream classifications in the Susquehanna River Basin

State - Classification*		Total Miles	Fishable/Swimmable
New York -	A	13.2	13.2
	A(T)	7.8	7.8
	A(TS)	3.7	3.7
	AA	0.9	0.9
	B	333.7	277.5
	B(T)	2.4	2.4
	C	1,200.84	1,176.34
	C(T)	922.2	922.2
	C(TS)	234.0	234.0
	D	679.3	673.9
Pennsylvania -	WWF	3,442.25	2,748.2
	HQ-WWF	15.7	15.7
	TSF	1,626.3	1,474.3
	HQ-TSF	281.4	270.4
	CWF	4,766.02	4,327.32
	HQ-CWF	3,469.4	3,387.3
	EV	253.13	253.13
Maryland -	I	44.7	39.7
	III	60.23	60.23
	IV	8.6	8.6
	TOTAL	17,365.77	15,896.82

* see appendix for definitions

PART III: SURFACE WATER ASSESSMENT

Chapter One: Summary Data

Methodology

The Susquehanna River Basin Commission's (SRBC) water quality assessment program is designed to determine whether the waters of the basin meet the water quality standards of the state in which the stream is located and coordinating standards between states to avoid conflicts on interstate streams. These standards are based on protected uses and water quality criteria to prevent stream degradation.

Reach assessments are based on data from SRBC stream surveys, federal and state agency surveys, consultants' environmental impact assessments and other miscellaneous sources. Other stream assessments are based on land use data, topographic map data, reach classifications, knowledge of activities in a watershed and lack of contrary information. The approach in determining stream use support status generally follow the guidelines provided in Appendix B of the 1992 305(b) Guidelines for evaluated and monitored (chemical and biological) waters.

Data gathered on the status of the basin's streams have been stored in SRBC's computer data base. This data base is similar to the EPA Water Body System (WBS), but is incompatible with EPA computer systems. Therefore, SRBC data for Pennsylvania streams have been transferred to the Pennsylvania Department of Environmental Resources (Pa. DER) data base to be uploaded to WBS.

Water quality summary

There are approximately 21,100 miles of named streams in the Susquehanna River Basin, of which 17,365 streams are assessed in this report. This is an increase of 4,097 stream miles, primarily due to the addition of stream reaches from the Chemung Subbasin and new stream reaches assessed since the last reporting cycle. Reach specific data by subbasin is given in the appendix.

Over 91 percent of the assessed stream miles meet designated uses (table 3 & 4). This represents 15,897 miles of assessed streams.

Partial support of designated uses is reported for 3 percent (519.6 miles) of the assessed miles. Partial support is reported when some modification of the biological community is observed, or some violations of water quality standards are found during sampling.

Nonsupport of designated uses is reported for 5.5 percent (949.4 miles) of the assessed miles. When direct observation (professional judgement), water quality data, or a severely degraded biological community exists, a stream is reported as not supporting designated uses.

TABLE 3.--Overall use support summary for the Susquehanna River Basin

Type of water body: Streams/Rivers

Degree of Use Support	Assessment Basis: Evaluated	Assessment Basis: Monitored	Total Assessed
Miles fully supporting	10,939.13	4,957.69	15,896.82
Miles partially supporting	26.75	492.80	519.55
Miles not supporting	125.40	824.00	949.40
TOTAL	11,091.28	6,274.49	17,365.77

TABLE 4.--Individual use support summary for the Susquehanna River Basin

Type of water body: Streams/Rivers

State/Use Designation	Fully Supporting	Partially Supporting	Non-Support	Total
New York				
A	13.2			13.2
A(T)	7.8			7.8
A(TS)	3.7			3.7
AA	0.9			0.9
B	277.5	56.2		333.7
B(T)	2.4			2.4
C	1,176.34	21.7	2.8	1,200.84
C(T)	922.2			922.2
C(TS)	234			234.0
D	673.9		5.4	679.3
Pennsylvania				
WWF	2,748.2	288.05	406.0	3,442.25
HQ-WWF	15.7			15.7
TSF	1,474.3	34.2	117.8	162.3
HQ-TSF	270.4	4.0	7.0	281.4
CWF	4,327.32	90.4	348.3	4,766.02
HQ-CWF	3,387.3	20.0	62.1	3,469.4
EV	253.13			253.13
Maryland				
I	39.7	5.0		44.7
III	60.23			60.23
IV	8.6			8.6
TOTALS	15,896.82	519.55	949.4	17,365.77

Causes and sources of nonsupport of designated uses

The primary source of degraded water quality conditions is resource extraction impacting 68 percent, or 993.3 miles of degraded streams in the Susquehanna River Basin. Abandoned mine drainage from the coal mining industry is responsible for the majority of degraded stream miles. The pollutants that degrade stream quality from mining activities are metals, mainly iron, and sulfate.

Other sources degrading streams in the basin include municipal point sources (144.7 miles) and agricultural nonpoint sources (143.1 miles). Problems associated with municipal sources include increased nutrient levels and localized reduced oxygen levels from the discharge of oxygen demanding wastes. Agricultural impacts include increased nutrient loads and related depressed dissolved oxygen levels in areas of excessive nutrient enrichment.

Tables 5 and 6 list the various causes and sources of pollutants that degrade the water quality of streams and rivers in the Susquehanna River Basin.

TABLE 5.--Total miles of waters not fully supporting uses affected by various cause categories

Type of water body: Streams/Rivers

Cause Category	Contribution to Impairment	
	Major	Moderate/Minor
Unknown	41.7	6.0
Unknown Toxicity	8.2	
Pesticides	23.1	
Priority organics		
Nonpriority organics		
Metals	798.2	37.9
Ammonia	0.5	
Chlorine		6.0
Other inorganics		
Nutrients	155.3	3.0
pH	154.5	4.5
Siltation	5.0	3.3
Organic enrichment/DO	106.4	4.0
Salinity/TDS/chlorides	40.2	
Thermal modification	0.1	
Flow alteration	26.0	
Other habitat alteration	2.9	20.0
Pathogen indicators	48.2	12.8
Radiation		
Oil and grease	5.2	
Taste and odor		
Suspended solids		5.2
Noxious aquatic plants		
Filling and draining		
TOTALS	1,415.5	102.7

TABLE 6.--Total miles of waters not fully supporting uses affected by various source categories

Type of water body: Streams/Rivers

Cause Category	Contribution to Impairment	
	Major	Moderate/Minor
Point Sources		
Industrial	71.8	29.9
Municipal	125.9	18.8
Domestic	35.6	13.0
Storm sewers		
Other dischargers	6.8	5.2
Nonpoint sources		
Acid deposition	6.4	4.5
Agriculture	139.8	3.3
Silviculture		
Construction		
Urban runoff	7.8	20.0
Resource extraction	993.3	
Land disposal		
Hydro/habitat modification	22.0	
Other NPS		
Unknown	6.1	8.0
TOTALS	1,415.5	102.7

Chapter Two: Public Health/Aquatic Life Concerns

Introduction

Toxics in the nation's waters and its impacts on human and aquatic health has been of increasing concern to federal and state agencies. These pollutants enter the water environment from point sources, such as industrial facilities and sewage treatment plants, nonpoint sources, such as urban runoff, atmospheric deposition and weathering, and erosion of rock and soil.

The Susquehanna River Basin Commission's role in addressing toxic pollution is by supporting state and federal programs. The Commission assists other agencies in data collection for the overall goals of the Chesapeake Bay Program and Pa. DER's Priority Water Body Surveys. No SRBC programs are directed specifically at toxic substances in lakes or freshwater wetlands.

In May 1991, a river station was established on the main stem Susquehanna River at Marietta, Pa., to monitor the transport of metals and pesticides from the Susquehanna River Basin. In October 1991, additional stations on the Conestoga River at Conestoga, Pa., and Paxton Creek near Penbrook, Pa., were added to determine toxic runoff from agricultural and urban watersheds, respectively. These projects are funded under the Chesapeake Bay Program in cooperation with the Pa. DER.

The summary of stream miles affected by toxics and health impacts is presented in tables 7 and 8. Detailed assessments of stream reaches affected by toxics are provided in the appendix.

Size of waters affected by toxics

TABLE 7.--Total size affected by toxicants

Water Body	Size Monitored For Toxicants	Size with elevated Levels of Toxicants
River (miles)	1,100.4	867.4
Lakes (acres)	No Data	No Data
Wetlands (acres)	No Data	No Data

Heavy metals and pesticides account for the toxic impacting the waters in the Susquehanna River Basin. Although the sources for these pollutants vary from industrial and municipal point sources, agriculture and urban runoff, natural conditions, and unknown sources, abandoned mine drainage is the primary source contributing heavy metals to the Basin's waters.

Public health/aquatic life impacts

TABLE 8.--Toxic contamination/public health impacts

Water body	Pollutant	Comment
Susquehanna River near Hunlock Creek	PCB	Quillback Carpsucker Fish advisory
Spring Creek SR 3010 bridge at Oak Hall to mouth	Mirex	All fish species Consumption ban
Pinchot Lake	Shigellosis	Beach closing
W. Br. Codorus Cr. near Spring Grove	?	Fish kill from industrial discharge
W. Br. Codorus Cr. near Spring Grove	Dioxin	Green Sunfish Fish advisory
Kings Run Clearfield County	PCB	Leaking transformers from abandon coal mine

Section 303(d) waters

Under the section 304(1) process, several Priority Water Body Surveys (PWBS) were conducted on selected streams in the basin. Section 304(1) requires states to identify water bodies and associated discharges where, after the application of minimum technology based treatment requirements, more stringent effluent limitations will be required to control toxic substances. The PWBS were completed in cooperation with Pa. DER. These were done on a contractual basis and funded by Pa. DER's 205(j) grant. Since the last reporting cycle, PWBS were conducted on segments of Codorus Creek, Little Juniata River, Frankstown Branch Juniata River, Beaverdam Branch Juniata River, Halter Creek, Driftwood Branch Sinnemahoning Creek, Cowanesque River, and West Branch Susquehanna River. The results of the surveys are forwarded to Pa. DER, Bureau of Water Quality Management to fulfill the requirements pursuant to section 303(d).

Data-base records indicate that 276.4 miles of 304(1) waters were monitored for potential toxic problems. Of these, 148.9 miles are reported as impacted by toxics and 10 miles impacted by causes other than toxics. The primary pollutant responsible for these toxic impacts is heavy metals.

Chapter Three: Lake Quality Assessment

At this writing, SRBC has not conducted any assessment work on lakes or reservoirs in the basin.

Chapter Four: Estuary and Coastal Information

Not applicable.

Chapter Five: Wetlands Information

At this writing, SRBC has not conducted any assessment work on wetlands in the basin.

PART IV: GROUND-WATER QUALITY

The primary responsibility for the development or implementation of a ground-water protection strategy resides with the states. SRBC's ground-water program deals with water quantity as set forth in SRBC's "Regulations and Procedures for Review of Projects", Section 803.62 regulating ground-water withdrawals. Anyone proposing to withdraw ground water in excess of 100,000 gallons per day (gpd) or increase an existing withdrawal to more than 100,000 gpd from a single well or well field is subject to the Commission's ground-water withdrawal regulations. As part of the regulation, samples of ground water for water quality analysis must be obtained and results reported to the Commission every three years.

The Commission may obtain other ground-water quality information through investigations, studies and surveys pertaining to existing ground-water quality or probable future ground-water quality in the basin.

The natural ground-water quality in the basin is adequate for most uses only being constrained by the natural chemistry of the aquifer. Water high in sulfate and iron are common in aquifers containing coal deposits, while hydrogen sulfide and iron are found locally in other aquifers that yield good quality water.

PART V: WATER POLLUTION CONTROL PROGRAM

Introduction

The Susquehanna River Basin Compact provides that the states shall have the primary responsibility for water quality management and control. Therefore, SRBC provides a regional role in attempting to coordinate local, state and federal water quality management efforts; promote uniform enforcement of and compliance with established standards and classifications; and encourage amendment and modification of standards and classifications within the Basin, as deemed in the public interest.

SRBC's program objective is to control water pollution sufficiently to maintain and establish water quality capable of supporting multiple purpose uses for: public water supply after treatment; recreation, fish and wildlife; agriculture; industrial; and other such uses. To meet that objective, the overall goal to achieve is compliance with water quality standards and criteria for intrastate and interstate waters of the Basin as established by the signatory parties.

Chapter One: Point Source Control Program

SRBC's point source control program goal is to encourage continued upgrading and development of needed public and private waste treatment facilities. SRBC reviews proposed discharge permits and provides comments to permitting agencies on matters within SRBC jurisdiction. Reviews are oriented towards evaluating potential interstate or regional impacts.

Chapter Two: Nonpoint Source Control Program

SRBC's nonpoint source program goal is the increased control of stormwater runoff and nonpoint source pollution through the fulfillment of the objectives of the Chesapeake Bay Program. These objectives are related to monitoring and research recommendations, Baywide nutrient recommendations, and Baywide toxicant recommendations.

Chapter Three: Cost/Benefit Assessment

Not performed.

Chapter Four: Surface Water Monitoring Program

SRBC's goals are: increased monitoring of the effectiveness and enforcement of established water quality control regulations and programs; and managing a coordinated basinwide water quality and biological data collection and monitoring system. Several water quality/biological assessment surveys were conducted during this reporting cycle.

- **Interstate Water Quality Monitoring Network.** A monitoring program of interstate streams has been in place since 1986. This program is designed to assess the quality of interstate streams and monitor compliance with water quality standards. Water samples were collected quarterly and biological assessments were done annually. Annual monitoring reports are published by SRBC.

- **Codorus Creek PWBS.** A time-series survey of copper, lead, zinc and free cyanide was completed during August and September 1990. Data are used in Pa. DER management programs designed to abate toxic discharges and help ensure attainment of designated water uses.

- **Juniata River Watershed PWBS.** A time-series survey of copper, lead, zinc and discharger mixing analyses was completed during October 1990 and May through June 1991. Streams sampled include the Little Juniata River, source to mouth, Beaverdam Branch and Frankstown Branch Juniata River, and Halter Creek. Data are used in Pa. DER management programs designed to abate toxic discharges and help ensure attainment of designated water uses.

- **West Branch Susquehanna and Cowanesque River PWBS.** A time-series survey of aluminum, cadmium, copper, iron, lead, mercury, nickel, silver, total phenols, and discharger mixing analyses was completed during September and October 1991. Streams sampled include segments of the West Branch Susquehanna River, Driftwood Branch Sinnemahoning Creek, and Cowanesque River. Data are used in Pa. DER management programs designed to abate toxic discharges and help ensure attainment of designated water uses.

- **Assessment of Nutrient Sources from the Susquehanna River and Selected Watersheds.** Ongoing since 1984, this program has investigated the quantity of nutrient loads carried to the Chesapeake Bay from the Susquehanna River and selected watersheds differing in land uses. Annual and monthly loads have been calculated for storm and base-flow conditions.

- **Toxicant Monitoring of the Susquehanna River Basin and Selected Tributaries.** Three stream stations were established in 1991 on the Main Stem Susquehanna River at Marietta, Pa., Conestoga River at Conestoga, Pa., and Paxton Creek near Penbrook, Pa.. The sites were selected to monitor for the transport of metals and pesticides from the Susquehanna River Basin and to determine toxic runoff from an agricultural watershed and an urban watershed.

- **Nutrient and Pesticide Monitoring and Treatment of Surface and Subsurface Runoff at Two Farms in Dauphin County, Pa.** This is an ongoing study monitoring nutrient enriched surface runoff water and shallow ground water leaving an agricultural site via field drains. An artificial marsh was constructed to investigate the potential treatment of nutrient enriched water from agricultural field drains before entering the stream environment.

Chapter Five: Special Concerns and Recommendations

Acid mine drainage

Degradation of streams due to acid mine drainage (AMD) from past coal mining activities is the most widespread water quality problem in the Basin. AMD occurs when coal and sulfur-bearing minerals (pyrite) are exposed to oxidizing conditions to form sulfuric acid. The low pH of the water also dissolves metals (iron, manganese and aluminum) from the rock strata, which can enter nearby streams.

Remedial action of this problem is being pursued by state and federal agencies, but progress is slow. This is due to the great cost involved and the widespread nature of the problem. Successful abatement projects have been implemented in small areas, but the scope of the problem is so large that it will take many years before AMD effected streams meet designated uses.

Chesapeake Bay

Chesapeake Bay Program findings indicate that the Susquehanna River Basin contributes the major portion of nutrients and a significant portion of toxics to the Bay. In order to create a water quality condition necessary to support the living resources of the Bay, the states have agreed to reduce or control point and nonpoint sources of pollution. Programs and policies

implemented by Bay states to reduce nutrient and toxic transport to the Bay have produced water quality benefits in the Susquehanna Basin. Future efforts should focus on a continued commitment to the reduction of nutrients and a expanded commitment to reduce toxics and conventional pollutants.

Future goals

The Susquehanna River Basin Commission's water quality assessment program includes several future goals: 1) addition of new stream assessments in the Chemung and Eastern subbasins; 2) verification of past impaired use assessments through subbasin water quality and biological surveys; 3) continued monitoring of interstate streams and operation of nutrient monitoring stations; 4) conduct inventories of lakes and wetlands; and 5) eventually interfacing with WBS.

APPENDIX A.—STREAM CLASSIFICATIONS (BEST USAGES)

NEW YORK:

AA - Source of water supply for drinking subjected to disinfection treatment, culinary or food processing purposes and uses under B and C

A - Source of water supply for drinking subjected to treatment equal to coagulation, sedimentation, filtration and disinfection, culinary or food processing purposes and uses under B and C

B - Primary & secondary contact recreation and uses under C

C - Fishing and fish propagation

D - Fishing

(T) - after any class designation means designated waters are trout waters

(TS) -after any class designation means designated waters are suitable for trout spawning water

PENNSYLVANIA:

EV - Exceptional value water

HQ-TSF - High quality trout stocking fishery

HQ-CWF - High quality cold water fishery

HQ-WWF - High quality warm water fishery

TSF - Trout stocking fishery

CWF - Cold water fishery

WWF - Warm water fishery

MARYLAND:

I - Water contact recreation and aquatic life

II - Shellfish harvesting waters (not applicable to basin)

III - Natural trout waters

IV - Recreational trout waters

Source and Cause Codes for Impaired Stream Reaches

Source Codes

IW	-	Industrial wastes
MW	-	Municipal wastes
DW	-	Domestic wastes
OPS	-	Other point sources
AGR	-	Agricultural runoff
URBRO-		Urban runoff
AMD	-	Acid mine drainage
AP	-	Acid precipitation
ONS	-	Other nonpoint source
UNK	-	Unknown

Cause Codes

UNK	-	Unknown
TOX	-	Toxics
PEST	-	Pesticides
ORG	-	Organics
MET	-	Metals
NH3	-	Ammonia
CL	-	Chlorine
OIN	-	Other inorganics
NUTR	-	Nutrients
PH	-	pH
SILT	-	Siltation
DO	-	Organic enrichment/Dissolved oxygen
TDS	-	Dissolved solids/Chlorides
THRM	-	Thermal modification
FLOW	-	Flow alteration
HAB	-	Habitat alterations
BAC	-	Bacteria/Pathogens
RAD	-	Radiation
OIL	-	Oil and grease
ODOR	-	Taste and odor
SUSP	-	Suspended solids
AQPL	-	Noxious aquatic plants
FILL	-	Filling and draining

Unnamed tributary stream codes are found in Pa. DER's stream directory.

TABLE A1.--Impaired stream reaches in the Chemung River Subbasin

Stream Name	Reach	Class	Attained	Part	Not	Assessed	Source	Cause
Bear Creek	Source to Tioga River	CWF	-	-	1.1	1.1	AMD	PH
Canisteo River	Seneca St. Bridge to East Ave./Ashbaugh Hill Rd bridge	C	-	3.2	-	3.2	MW	UNKOX
Chemung River	Hoffman Brook to Bently Creek	C	-	8.0	-	8.0	MW	BAC
Chemung River	Bentley Creek to Pennsylvania state line	C	-	7.5	-	7.5	MW	BAC
Coal Creek	Unnamed tributary 31477 to Tioga River	CWF	-	-	2.2	2.2	AMD	PH
Fall Brook	Unnamed tributary 31522 to Tioga River	CWF	-	-	5.8	5.8	AMD	PH
Fellows Creek	Unnamed tributary 31546 to Tioga River	CWF	-	5.9	-	5.9	AP	PH
Johnson Creek	Unnamed tributary 31475 to Tioga River	CWF	-	3.9	-	3.9	AMD	PH
Morris Run	Unnamed tributary 31492 to Tioga River	CWF	-	-	5.3	5.3	AMD	PH
Newtown Creek	Diven Creek to Chemung River	C	-	-	2.8	2.8	MW	NUTR,BA
North Fork Cowanesque River	New York state line to Tioga County line	CWF	-	3.3	-	3.3	AGR	NUTR,SI
Troups Creek	New York state line to Cowanesque River	CWF	-	5.2	-	5.2	ONS	OIL,SUS
		TOTAL	0.0	37.0	17.2	54.2		

TABLE A2.--Impaired stream reaches in the Eastern Subasin

Stream Name	Reach	Class	Attained	Part	Not	Assessed	Source	Cause
Brakel Creek	Chenango County line to Otselic River	D	-	-	1.9	1.9	MW	DO
Brakel Creek	Source to Cortland County line	D	7.3	-	1.1	8.4	MW	DO
Cascade Creek	New York state line to Susquehanna River	CWF	-	1.7	-	1.7	UNK	UNK
Chenango River	Tributary #41 to Broome County line	B	4.5	15.0	-	19.5	MW	BAC
Chenango River	Fly Creek to North Norwich/Norwich town line	B	-	4.6	-	4.6	MW	BAC
Little Choconut Creek	Source to Susquehanna River	D	9.0	-	0.1	9.1	IW	THRM
Payne Brook	Hamilton to Chenango River	D	-	-	2.3	2.3	MW	DO
Susquehanna River	Otsego Lake to Delaware County line	B	32.0	8.0	-	40.0	MW	DO
Susquehanna River	Rock Bottom Dam to Tioga County line	C	11.0	3.0	-	14.0	MW	DO
Trowbridge Creek	New York state line to Susquehanna River	CWF	-	1.6	-	2.0	ONS	PEST
Unadilla River	Madison County line to Susquehanna River	B	10.8	28.6	-	39.4	DW	BAC
		TOTAL	74.6	62.5	5.4	142.9		

TABLE A3.--Impaired stream reaches in the Upper Susquehanna River Subbasin

Stream Name	Reach	Class	Attained	Part	Not	Assessed	Source	Cause
Ackerly Creek	South branch to South Branch Tunkhannock Creek	TSF	4.0	4.7	-	8.7	MW	DO
Black Creek	Source to Nescopeck Creek	CWF	-	-	23.5	23.5	AMD	PH
Brown Creek	Source to Susquehanna River	CWF	1.2	-	1.9	3.1	AMD	UNK
Catawissa Creek	Luzerne County line to Rattling Run	CWF	-	-	11.3	11.3	AMD	PH
Catawissa Creek	Source to Luzerne County line	CWF	-	-	0.7	0.7	AMD	PH
Catawissa Creek	Schuylkill County line to Susquehanna River	TSF	-	-	20.5	20.5	AMD	PH
Catawissa Creek	Rattling Run to Columbia County line	TSF	-	-	6.7	6.7	AMD	PH
Catawissa Creek	Schuylkill County line to Schuykill County line	CWF	-	-	3.2	3.2	AMD	PH
Coal Brook	Source to Lackawanna River	CWF	0.3	-	1.9	2.2	AMD	MET
Cranberry Creek	Unnamed tributary 28124 to Black Creek	CWF	-	-	1.2	1.2	AMD	UNK
Eddy Creek	Unnamed tributary 63873 to Lackawanna River	WWF	4.0	-	3.0	7.0	AMD	FLOW
Espy Run	Unnamed tributary 64625 to Nanticoke Creek	CWF	-	-	1.7	1.7	AMD	UNK
Fall Brook	Unnamed tributary 28590 to Lackawanna River	CWF	6.0	-	1.1	7.1	AMD	FLOW
Grassy Island Creek	From 1100 foot countour to Lackawanna River	CWF	-	-	1.3	1.3	AMD	FLOW
Hunkydory Creek	Schuylkill County line to Catawissa Creek	CWF	-	-	0.8	0.8	AMD	UNK
Hunkydory Creek	Reservoir #8 to Luzerne County line	CWF	0.2	-	0.4	0.6	AMD	UNK
Keyser Creek	Source to Lackawanna River	CWF	1.5	-	4.8	6.3	AMD	FLOW
Lackawanna River	Lackawanna County line to Susquehanna River	WWF	-	-	2.6	2.6	AMD	MET
Lackawanna River	Rush Brook to Luzerne County line	WWF	-	22.6	-	22.6	MW,URBRO	DO,HAB
Little Nescopeck Creek	Source to Nescopeck Creek	CWF	-	-	9.1	9.1	AMD	PH
Little Tomhickon Creek	Source to Tomhickon Creek	CWF	-	-	1.0	1.0	AMD	UNK
Lucky Run	Source to Keyser Creek	CWF	1.9	-	0.9	2.8	AMD	FLOW
Meadow Brook	Source to Lackawanna River	CWF	-	-	2.1	2.1	AMD	FLOW
Mill Creek	Source to Lackawanna River	CWF	2.7	-	4.1	6.8	AMD	FLOW
Mill Creek	Source to Susquehanna River	CWF	13.7	0.5	-	14.2	URBRO	HAB
Nanticoke Creek	Source to Susquehanna River	CWF	1.4	-	3.6	5.0	AMD	PH
Nescopeck Creek	PA 309 Bridge to Susquehanna River	TSF	12.2	-	13.5	25.7	AMD	PH
Newport Creek	Source to Susquehanna River	CWF	-	-	4.8	4.8	AMD	PH
Pettis Creek	Source to Wyalusing Creek	WWF	3.1	0.5	-	3.6	MW	DO
Powderly Creek	Source to Lackawanna River	CWF	-	-	1.9	1.9	AMD	MET
Red Spring Run	Lackawanna County line to Lackawanna River	CWF	-	-	0.6	0.6	AMD	FLOW
Schrader Creek	Sullivan County line to Towanda Creek	HQ-CWF	8.2	4.0	8.5	20.7	AMD	PH
Solomon Creek	Source to Susquehanna River	CWF	4.2	3.3	1.5	9.0	AMD	PH
South Branch	Unnamed tributaty 28346 to Newport Creek	CWF	-	-	3.4	3.4	AMD	UNK
South Branch Wyalusing Creek	Source to East Branch Wyalusing Creek	WWF	-	9.0	-	9.0	AGR	NUTR
St Johns Creek	Unnamed tributary 28381 to Lackawanna River	CWF	1.2	-	4.8	6.0	AMD	FLOW
Stafford Meadow Brook	Lower Moosic/Scranton line to Lackawanna River	WWF	-	2.4	-	2.4	URBRO	HAB
Sterry Creek	Source to Lackawanna River	CWF	1.4	-	2.4	3.8	AMD	FLOW
Stony Creek	Unnamed tributary 28122 to Cranberry Creek	CWF	2.4	-	0.8	3.2	AMD	UNK
Sugar Run Creek	Source to Sugar Run Creek	CWF	9.0	0.5	-	9.5	IW	UNKTOX
Susquehanna River	Lackawanna River to Columbia County line	WWF	8.5	26.0	2.0	36.5	AMD	MET
Susquehanna River	Chemung River to Chemung County line	WWF	39.3	0.5	-	39.8	IW	NH3
Toby Creek	Source to Susquehanna River	CWF	9.1	1.4	1.0	11.5	UNK	TDS
Tomhickon Creek	Luzerne County line to Catawissa Creek	CWF	-	-	6.3	6.3	AMD	PH
Tomhickon Creek	Source to Schuylkill County line	CWF	-	-	4.3	4.3	AMD	PH
Wadham Creek	Source to Susquehanna River	CWF	-	-	1.1	1.1	AMD	UNK

TABLE A3.--Impaired stream reaches in the Upper Susquehanna River Subbasin--Continued

Stream Name	Reach	Class	Attained	Part	Not	Assessed	Source	Cause
Warrior Creek	Unnamed tributary 28351 to Susquehanna River	CWF	-	-	1.2	1.2	AMD	UNK
Wildcat Creek	Source to Lackawanna River	CWF	2.4	-	0.9	3.3	AMD	FLOW
Wilson Creek	Source to Lackawanna River	CWF	3.0	-	0.6	3.6	AMD	MET
Wyalusing Creek	Susquehanna County line to Susquehanna River	WWF	10.7	4.0	-	14.7	DW	DO
		TOTAL	151.6	79.4	167.0	398.0		

TABLE A4.--Impaired stream reaches in the West Branch Susquehanna River Subbasin

Stream Name	Reach	Class	Attained	Part	Not	Assessed	Source	Cause
Alder Run	Unnamed tributary 64554 to West Br. Susquehanna River	CWF	-	-	10.7	10.7	AMD	MET
Amos Branch	Unnamed tributary 25546 to Birch Island Run	HQ-CWF	-	-	1.6	1.6	AMD	MET
Anderson Creek	Dubois Reservoir to West Branch Susquehanna River	CWF	4.5	-	10.3	14.8	AMD	MET
Babb Creek	Source to Pine Creek	CWF	7.5	-	14.0	21.5	AMD	MET
Bear Run	Indiana County line to West Branch Susquehanna River	CWF	-	-	2.9	2.9	AMD	MET
Beech Creek	Big Run to Bald Eagle Creek	CWF	-	-	11.2	11.2	AMD	MET
Beech Creek	North/South Forks Beech Creek to Big Run	CWF	-	-	16.1	16.1	AMD	MET
Bennett Br. Sinnemahoning Cr.	Clearfield County line to Cameron County line	WWF	-	-	24.0	24.0	AMD	MET
Bennett Br. Sinnemahoning Cr.	Cameron County line to Sinnemahoning Creek	WWF	-	-	8.8	8.8	AMD	MET
Bennett Br. Sinnemahoning Cr.	McCracken Run to Elk County line	WWF	6.4	-	4.8	11.2	AMD	MET
Birch Island Run	Unnamed tributary 25548 to West Br. Susquehanna River	HQ-CWF	-	-	6.2	6.2	AMD	MET
Black Moshannon Creek	Shirks Run to Mashannon Creek	HQ-CWF	18.6	1.0	-	19.6	AMD	MET
Buckeye Run	Jack Cammals Camp Run to Otter Run	CWF	-	0.9	-	0.9	AMD	MET
Chatham Run	Chatham Water Co. Res. #2 to West Br. Susquehanna River	CWF	2.1	2.0	-	4.1	UNK	UNK
Cherry Run	Source to North Fork Beech Creek	CWF	-	-	0.9	0.9	AMD	MET
Clearfield Creek	Unnamed tributary 26605 to Clearfield County line	WWF	-	27.7	-	27.7	AMD	MET
Clearfield Creek	Cambria County line to West Branch Susquehanna River	WWF	-	-	44.2	44.2	AMD	MET
Cold Stream	Route US 322 to Mosannon Creek	CWF	-	-	1.0	1.0	AMD	MET
Cooks Run	Onion Run to West Branch Susquehanna River	CWF	2.1	-	3.3	5.4	AMD	MET
Curleys Run	Source to Mosquito Creek	HQ-CWF	-	-	1.2	1.2	AMD	MET
Deer Creek	Unnamed tributary 26008 to West Br. Susquehanna River	CWF	4.0	-	5.0	9.0	AMD	MET
Drury Run	Bark Shanty Hollow to West Branch Susquehanna River	HQ-CWF	3.5	-	3.0	6.5	AMD	MET
Kettle Creek	Potter County line to West Branch Susquehanna River	HQ-TSF	19.2	2.0	3.0	24.2	AMD	MET
Kratzer Run	Unnamed tributary 26671 to Anderson Creek	CWF	-	-	5.1	5.1	AMD	MET
Laurel Run	Unnamed tributary 64620 to Moshannon Creek	CWF	-	-	5.4	5.4	AMD	MET
Left Fork Otter Run	Source to Otter Run	CWF	-	1.5	-	1.5	AMD	MET
Lick Run	Source to West Branch Susquehanna River	HQ-CWF	3.2	4.5	3.7	11.4	AMD,AP	MET,PH
Little Anderson Creek	Unnamed tributary 26695 to Anderson Creek	CWF	-	-	5.7	5.7	AMD	MET
Little Birch Island Run	Unnamed tributary 25537 to Birch Island Run	HQ-CWF	-	-	4.3	4.3	AMD	MET
Little Bougher Run	Source to West Branch Susquehanna River	CWF	-	-	1.1	1.1	AMD	MET
Little Sandy Run	Unnamed tributary 22794 to North Fork Beech Creek	CWF	-	-	2.7	2.7	AMD	MET
Little Surveyor Run	Source to Surveyor Run	CWF	-	-	2.0	2.0	AMD	MET
Logway Run	Source to Beech Creek	CWF	-	-	0.8	0.8	AMD	MET
Loop Run	Unnamed tributary 25572 to West Br. Susquehanna River	CWF	-	-	2.4	2.4	AMD	MET
Loyalsock Creek	Wyoming County line to Lycoming County line	CWF	13.0	-	25.0	38.0	AMD	MET
Mackeys Run	Unnamed tributary 19731 to The Outlet	HQ-CWF	1.1	0.5	-	1.6	AP	PH
Marsh Creek	Source to Straight Run	WWF	10.9	-	3.3	14.2	MW	DO
Marsh Creek	Straight Run to Pine Creek	TSF	1.4	-	1.8	3.2	MW	DO
Middle Branch Two Mile Run	Source to Two Mile Run	HQ-TSF	-	-	2.1	2.1	AMD	MET
Montgomery Creek	Clearfield Reservoir to West Branch Susquehanna River	CWF	0.7	-	2.2	2.9	AMD	MET
Moshannon Creek	Unnamed tributary 25911 to West Br. Susquehanna River	TSF	3.4	-	52.4	55.8	AMD	MET
Mosquito Creek	Elk County line to West Branch Susquehanna River	HQ-CWF	11.3	-	6.0	17.3	AMD	MET
North Fork Beech Creek	Unnamed tributary 22797 to Beech Creek	CWF	-	-	5.9	5.9	AMD	MET
Otter Run	Right Fork Otter Run to Little Pine Creek	CWF	-	-	3.8	3.8	AMD	MET
Red Run	Unnamed tributary 20783 to Lycoming Creek	CWF	-	-	3.9	3.9	AMD	MET
Right Fork Otter Run	Unnamed tributary 21264 to Otter Run	CWF	-	0.4	-	0.4	AMD	MET

TABLE A4.--Impaired stream reaches in the West Branch Susquehanna River Subbasin--Continued

Stream Name	Reach	Class	Attained	Part	Not	Assessed	Source	Cause
Saltlick Run	Unnamed tributary 25619 to West Branch Susquehanna R.	HQ-CWF	-	-	1.5	1.5	AMD	MET
Sandy Run	Unnamed tributary 23629 to Drury Run	HQ-CWF	2.2	1.0	-	3.2	AMD	MET
Sinnemahoning Creek	Bennett/Driftwood Branches to Clinton County line	WWF	-	-	6.7	6.7	AMD	MET
Sinnemahoning Creek	Cameron County line to West Branch Susquehanna River	WWF	-	-	9.1	9.1	AMD	MET
Slab Cabin Run	PA Rt 26 to Spring Creek	CWF	5.3	-	1	6.3	MW	DO
Spring Creek	Unnamed tributary 23089 to Bald Eagle Creek	CWF	3	21.5	-	24.5	IW	PEST
Sterling Run	Miles Run to West Branch Susquehanna River	HQ-CWF	-	-	7.2	7.2	AMD	MET
Stony Run	Source to Drury Run	HQ-CWF	2.0	-	1.3	3.3	AMD	MET
Surveyor Run	Source to West Branch Susquehanna River	CWF	-	-	4.0	4.0	AMD	MET
Tangascootack Creek	Unnamed tributary 23383 to West Branch Susquehanna R.	CWF	-	8.4	-	8.4	AMD	MET
Trout Run	Unnamed tributary 26076 to West Branch Susquehanna R.	HQ-CWF	8.8	5.0	-	13.8	AMD	PH
Two Mile Run	Middle Branch Two Mile Run to Kettle Creek	HQ-TSF	-	-	1.9	1.9	AMD	MET
West Br. Susquehanna River	Centre County line Clinton County line	WWF	-	-	4.9	4.9	AMD	MET
West Br. Susquehanna River	Unnamed tributary 27283 to Clearfield County line	WWF	-	-	13.5	13.5	AMD	MET
West Br. Susquehanna River	Cambria County line to Centre County line	WWF	24.9	20.4	47.6	92.9	AMD	MET
West Br. Susquehanna River	Clinton County line to Clinton County line	WWF	-	-	7.4	7.4	AMD	MET
West Br. Susquehanna River	Clearfield County line to Centre County line	WWF	-	-	7.4	7.4	AMD	MET
West Br. Susquehanna River	Clearfield County line to Clinton County line	WWF	-	-	4.9	4.9	AMD	MET
West Br. Susquehanna River	Centre County line to Lycoming County line	WWF	8.9	-	43.2	52.1	AMD	MET
Wilson Creek	Source to Babb Creek	CWF	9.3	-	2.3	11.6	AMD	MET
Woodley Draft	Source to Drury Run	HQ-CWF	-	-	1.7	1.7	AMD	MET
		TOTAL	177.3	96.8	477.4	751.5		

TABLE A5.--Impaired strream reaches in the Juniata River Subbasin

Stream Name	Reach	Class	Attained	Part	Not	Assessed	Source	Cause
Adams Run	Source to Dunning Creek	WWF	3.4	1.3	-	4.7	MW	DO
Beaverdam Branch Juniata R.	Source to Frankstown Branch Juniata River	WWF	-	-	14.0	14.0	MW	DO
Blair Gap Run	Source to Beaverdam Branch Juniata River	WWF	9.1	-	0.4	9.5	MW	DO
Burgoon Run	Lake Altoona to Beaverdam Branch Juniata River	WWF	-	-	3.0	3.0	AMD	MET
Frankstown Branch Juniata R.	Halter Creek to Piney Creek	WWF	-	12.0	-	12.0	IW,MW	DO,CL
Great Trough Creek	Bedford County line to Raystown Branch Junaita River	TSF	24.1	-	3.0	27.1	MW	UNK
Halter Creek	Bedford County line to Frankstown Branch Juniata River	WWF	-	6.6	-	6.6	IW	DO
Halter Creek	Source to Blair County line	WWF	-	-	2.8	2.8	IW	DO
Jacks Creek	Meadows Creek to Juniata River	TSF	6.3	2.0	-	8.3	IW	UNKTOX
Kishacoquillas Creek	Source to Tea Creek	TSF	12.6	-	5.0	17.6	AGR	SILT
Kishacoquillas Creek	Tea Creek to Juniata River	TSF	4.1	-	2.7	6.8	IW,MW	MET,DO
Little Juniata River	Source to Downstream Huntingdon County line	TSF	10.0	6.0	2.0	18.0	IW,MW	UNK
Plum Creek	Source to Halter Creek	WWF	3.1	2.0	1.5	6.6	MW	DO
Sugar Run	Source to Little Juniata River	WWF	-	-	2.5	2.5	IW	UNKTOX
Sugar Run	Source to Beaverdam Branch Juniata River	WWF	-	-	6.3	6.3	AMD	MET
Yellow Creek	Blair County line to Raystown Branch Juniata River	HQ-CWF	15.7	4.0	-	19.7	MW	UNK
		TOTAL	88.4	33.9	43.2	165.5		

TABLE A6.--Impaired stream reaches in the Lower Susquehanna River Subbasin

Stream Name	Reach	Class	Attained	Part	Not	Assessed	Source	Cause
Bear Creek	Unnamed tributary 17043 to Wiconisco Creek	CWF	-	-	4.4	4.4	AMD	MET
Beaver Creek	Source to Adams County line	WWF	-	0.5	-	0.5	MW	DO
Beaver Creek	Adams County line to West Conewago Creek	WWF	1.4	0.5	1.0	2.9	MW	DO
Beaver Creek	York County line to West Conewago Creek	WWF	1.5	0.4	1.0	2.9	MW	DO
Big Beaver Creek	Quarryville Sewage Treatment Plant to Pequea Creek	TSF	6.9	0.6	0.5	8.0	MW	DO
Bowers Run	Stream mile 0.9 to West Conewago Creek	WWF	0.4	-	0.5	0.9	MW	DO
Carbon Run	Unnamed tributary 18649 to Shamokin Creek	CWF	-	-	3.7	3.7	AMD	MET
Chickies Creek	Lebanon County line to Susquehanna River	WWF	2.9	27.0	-	29.9	AGR	NUTR
Coal Run	Gebhard Run to Middle Creek	CWF	-	-	1.6	1.6	AMD	MET
Coal Run	Source to Shamokin Creek	CWF	-	-	3.0	3.0	AMD	MET
Cocalico Creek	Blue Lake to Conestoga Creek	WWF	21.3	5.3	-	26.6	AGR	NUTR
Codorus Creek	Oil Creek to Susquehanna River	WWF	-	20.0	5.0	25.0	IW	TDS,MET
Conestoga Creek	Source to Susquehanna River	WWF	35.0	25.0	-	60.0	AGR	NUTR
Conodoguinet Creek	Franklin County line to Susquehanna River	WWF	60.7	9.0	-	69.7	MW	NUTR
Conowingo Creek	Source Maryland State line	CWF	-	15.6	-	15.6	AGR	NUTR
Crab Run	Unnamed tributary 17672 to Mahanoy Creek	CWF	-	-	1.3	1.3	AMD	MET
Deep Creek	Source to Pine Creek	CWF	17.7	4.5	-	22.2	AMD	TDS
Doc Smith Run	Unnamed tributary 17020 to West Branch Rattling Creek	HQ-CWF	-	-	1.5	1.5	AMD	MET
East Branch Octoraro Creek	Christiana to Octoraro Lake	TSF	15.0	2.0	-	17.0	MW	DO
East Branch Rattling Creek	Unnamed tributary 17040 to Rattling Creek	HQ-CWF	-	-	3.8	3.8	AMD	MET
East Branch Rausch Creek	Unnamed tributary 17269 to Rausch Creek	CWF	-	-	1.9	1.9	AMD	MET
East Conewago Creek	Lebanon County line to Susquehanna River	TSF	16.8	-	1.8	18.6	MW	NUTR
Gebhard Run	Source to Coal Run	CWF	-	-	1.9	1.9	AMD	MET
Good Spring Creek	Unnamed tributary 10082 to Middle Creek	CWF	-	-	5.0	5.0	AMD	MET
Little Mahanoy Creek	Source to Mahanoy Creek	WWF	4.5	-	2.0	6.5	AMD	MET
Little Muddy Creek	Source to Lancaster County line	TSF	-	3.3	-	3.3	MW	DO
Little Muddy Creek	Berks County line to Muddy Creek	TSF	2.0	5.0	-	7.0	MW	DO
Locust Creek	Unnamed tributary 18656 to Shamokin Creek	CWF	-	-	1.6	1.6	AMD	MET
Lorberry Creek	Stumps Run to Lower Rausch Creek	CWF	-	-	1.7	1.7	AMD	MET
Lower Rausch Creek	Source to Swatara Creek	CWF	-	-	3.9	3.9	AMD	MET
Mahanoy Creek	Source to Northumberland County line	WWF	-	-	26.8	26.8	AMD	MET
Mahanoy Creek	Schuylkill County line to Susquehanna River	WWF	-	-	25.4	25.4	AMD	MET
Manns Run	Stream mile 1.0 to Susquehanna River	WWF	-	-	1.0	1.0	AGR	NUTR
Middle Creek	Lebanon County line to Cocalico Creek	HQ-TSF	10.3	2.0	-	12.3	MW	NUTR
Middle Creek	Coal Run to Swatara Creek	CWF	-	-	1.1	1.1	AMD	MET
Mill Creek	Source to Conestoga Creek	WWF	6.5	18.5	2.7	27.7	AGR,MW	NUTR,DO
Nine O'clock Run	Unnamed tributary 17038 to East Branch Rattling Creek	HQ-CWF	-	-	0.6	0.6	AMD	MET
North Branch Shamokin Creek	Source to Shamokin Creek	CWF	-	-	4.6	4.6	AMD	MET
North Mahanoy Creek	Unnamed tributary 17692 to Mahanoy Creek	CWF	-	-	5.5	5.5	AMD	MET
Panther Creek	Source to Swatara Creek	CWF	-	-	1.8	1.8	AMD	MET
Paxton Creek	Source to Susquehanna River	WWF	7.9	2.0	2.9	12.8	URBRO	NUTR
Pequea Creek	Source to Susquehanna River	WWF	47.3	5.0	-	52.3	AGR	NUTR
Pine Creek	Source to Dauphin County line	CWF	14.5	8.3	-	22.8	AMD	TDS
Poplar Creek	Source to Good Spring Creek	CWF	-	-	0.9	0.9	AMD	MET
Quaker Run	Unnamed tributary 18653 to Shamokin Creek	CWF	-	-	1.3	1.3	AMD	MET
Quittapahilla Creek	Source to Swatara Creek	TSF	1.0	10.6	4.9	16.5	AGR,IW	NUTR,MET

TABLE A6.--Impaired stream reaches in the Lower Susquehanna River Subbasin--Continued

Stream Name	Reach	Class	Attained	Part	Not	Assessed	Source	Cause
Rattling Creek	East/West Branches to Wiconisco Creek	HQ-CWF	-	-	2.2	2.2	AMD	MET
Rausch Creek	Confluence of East and West Branches to Pine Creek	CWF	-	-	1.7	1.7	AMD	MET
Scott Creek	Source of Muddy Creek	TSF	-	-	3	3	DW	MET,NUTR
Shale Run	Unnamed tributary 17025 to West Branch Rattling Creek	HQ-CWF	-	-	0.8	0.8	AMD	MET
Shamokin Creek	Source to Susquehanna River	WWF	-	-	34.7	34.7	AMD	MET
Shawnee Run	Source to Susquehanna River	WWF	6.6	-	0.9	7.5	IW	MET
Shenandoah Creek	Kehly Run to Mahanoy Creek	CWF	-	-	5.0	5.0	AMD	MET
South Branch Codorus Creek	Glen Rock to Codorus Creek	WWF	4.5	10.0	-	14.5	AGR,DW	NUTR,BAC
Spring Creek	Rt. 422 Bridge to Swatara Creek	WWF	2.5	0.3	-	2.8	MW	DO
Stone Cabin Run	Unnamed tributary 17034 to East Branch Rattling Creek	HQ-CWF	-	-	1.8	1.8	AMD	MET
Stumps Run	Source to Lorberry Creek	CWF	-	-	0.6	0.6	AMD	MET
Susquehanna River	Dauphin County line to Maryland State line	WWF	16.2	25.0	-	41.2	HYDRO,UN	DO,MET
Susquehanna River	Pennsylvania State line to Chesapeake Bay	I	10.0	5.0	-	15.0	HYDRO	DO
Swatara Creek	Source to Lebanon County line	CWF	-	-	9.8	9.8	AMD	MET
Swatara Creek	Schuylkill County line to Swatara Gap	CWF	-	-	3.4	3.4	AMD	MET
West Branch Rattling Creek	Wolf Run to Rattling Creek	HQ-CWF	-	-	5.2	5.2	AMD	MET
West Branch Rausch Creek	Source to Rausch Creek	CWF	-	-	3.5	3.5	AMD	MET
White Horse Run	Source near Meadville School to Pequea Creek	WWF	-	4.6	-	4.6	AGR	NUTR
Wiconisco Creek	Schuylkill County line to Susquehanna River	WWF	34.0	-	27.8	61.8	AMD	MET
Wiconisco Creek	Source to Dauphin County line	WWF	-	-	6.4	6.4	AMD	MET
Zerbe Run	Unnamed tributary 17643 to Mahanoy Creek	CWF	-	-	5.8	5.8	AMD	MET
		TOTAL	347.4	210.0	239.2	796.6		


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